

Chao Li

- CONTACT INFORMATION Princeton University (650)739-9165
Fine Hall, Washington Road chaoli@math.princeton.edu
Princeton, NJ, 08544-1000, USA <http://web.math.princeton.edu/~chaoli>
- RESEARCH INTERESTS My research interests include differential geometry, partial differential equations, and geometric measure theory. My recent work is focused on geometric variational problems and their applications.
- EMPLOYMENT **Princeton University**
Instructor, September 2018 to now.
- AFFILIATION **Institute for Advanced Study**
Visitor, September 2018 to August 2019.
- EDUCATION **Stanford University**
Ph.D. in Mathematics, July 2018.
• Advisors: Richard Schoen and Brian White
Peking University
B.A. in Mathematics, July 2013
• GPA 3.88 on 4.0 scale, department ranking 1/160.
- GRANTS NSF Grant DMS-2005287 (7/1/20 - 6/30/23):
Geometric variational problems and scalar curvature
- RESEARCH PAPERS *Generalized soap bubbles and the topology of manifolds with positive scalar curvature*, joint with Otis Chodosh, submitted.

Dihedral rigidity of parabolic polyhedrons in hyperbolic spaces, SIGMA 16 (2020), 099, Special Issue on Scalar and Ricci Curvature in honor of Misha Gromov on his 75th Birthday.

Regularity of free boundary minimal surfaces in locally polyhedral domains, joint with Nicolous Edelen, submitted.

The dihedral rigidity conjecture for n -prisms, submitted.

Constrained deformations of positive scalar curvature metrics, joint with Alessandro Carlotto, submitted.

A polyhedron comparison theorem for 3-manifolds with positive scalar curvature, Invent. Math. 219, 1–37 (2020).

Positive scalar curvature with skeleton singularities, Math. Ann. 374, 99–131 (2019).

Index and topology of minimal hypersurfaces in \mathbf{R}^n , Calc. Var. 56, 180 (2017).

CONFERENCE ORGANIZED	Fall 2020 AMS Sectional Meeting Variational Aspects of Geometric Analysis	October 2020
INVITED CONFERENCE TALKS	Virtual Workshop on Ricci and Scalar curvature Plenary address: Geometric comparison theorems for scalar curvature	August 2020
	Oberwolfach Workshop 1930- Partial Differential Equations Mathematisches Forschungsinstitut Oberwolfach	July 2019
	Geometry of Scalar Curvature - Conference and Summer School Scuola Normale Superiore di Pisa, Palazzone di Cortona	July 2019
	Workshop: Convergence and Low Regularity in General Relativity Simons Center in Geometry and Physics	May 2019
	Workshop in Scalar Curvature on Singular Spaces Courant Institute	December 2018
	ICM Satellite Conference University of Miami	July 2018
	AMS Joint Mathematical Meeting San Diego Convention Center	January 2018
	Advances in Geometric Analysis ETH Zürich	June 2017
	XIX School on Differential Geometry Instituto de Matemática Pura e Aplicada (IMPA)	July 2016
INVITED ADVANCED MINI-COURSES	Master class in differential geometry: the structure of limit spaces Institut Henri Poincaré Postponed to July 2021 due to Covid-19	July 2020
SEMINAR TALKS	California Institute of Technology Geometry and Topology Seminar	October 2020
	University of California, Irvine Differential Geometry Seminar	October 2020
	Columbia University Analysis and Geometry Seminar	October 2020
	Fields Institute Geometric Analysis Colloquium	October 2020
	Stanford University	September 2020

Geometry Seminar	
University of Notre Dame	September 2020
Geometric Analysis Seminar	
Duke University	September 2020
Geometry and Topology Seminar	
University of Waterloo	September 2020
Geometry and Topology Seminar	
Princeton University	June 2020
Differential Geometry and Geometric Analysis Seminar	
Stony Brook University	April 2020
Grometry and Topology Seminar	
Harvard University, CMSA	April 2020
General Relativity Seminar	
Peking University	December 2019
Geometric Analysis and General Relativity Seminar	
Johns Hopkins University	October 2019
Analysis and Partial Differential Equations Seminar	
Rutgers University- New Brunswick	September 2019
Geometric Analysis Seminar	
Institute of Advanced Study	October 2018
Special year on “Variational Methods in Geometric Analysis”	
University of California, Berkeley	Jan 2018
Geometric Analysis Seminar	
Massachusetts Institute of Technology	December 2017
Geometric Analysis Seminar	
Princeton University	November 2017
Differential Geometry and Geometric Analysis Seminar	
University of Chicago	October 2017
Geometric Analysis Seminar	
University of California, Santa Barbara	March 2017
Geometry Seminar	

**Teaching
Experience**

Instructor, Princeton University

- MAT 355, Introduction to Differential Geometry: Spring 2020
- MAT 300, Multivariable Analysis I: Fall 2020
- MAT 103, Single Variable Calculus: Fall 2019, Fall 2018
- MAT 201, Multi-variable Calculus: Spring 2019

Teaching Assistant, Stanford University

Stanford Math 51, Linear Algebra and Differential Calculus of Several Variables
Stanford Math 42, Calculus ACE (Additional Calculus for Engineers)

- ACE program is designed to enhance diversity among engineering students.

Teaching Assistant, Minimal Surfaces: Old and New

- Summer 2017, lecture by Alessandro Carlotto.
- As part of Summer School on Geometric Analysis in the Fields Institute for Research in Mathematical Sciences

Course Assistant, Stanford University

Math 113: Linear Algebra and Matrix Theory
Math 20: Integral Calculus
Math 172: Lebesgue Integration and Fourier Analysis
Math 114: Applied Matrix Theory
Math 382: Algebra Ph.D. qualifying exams

**HONORS AND
AWARDS**

Pólya Teaching Fellow Award	2018
Honors one graduating PhD student in Department of Mathematics, Stanford University, each year for his or her outstanding teaching during his or her time in the program	
S. T. Yau College Students Mathematics Contests, Team Contest	2012
Silver Medal	
Chinese National Scholarship	2012
National award for outstanding students in universities and colleges	
The Mathematical Contest in Modeling	2012
Meritorious Honor	
Outstanding Students of Peking University	2010, 2011, 2012
Awarded for outstanding Peking University students	
Chinese Mathematics Olympiad	2009
Perfect score gold medal	
All Russian Mathematics Olympiad	2007
Gold medal	

**Academic
activities**

Seminar organization

Differential Geometry and Geometric Analysis Seminar, Princeton University, Fall 2019- ~

Geometric Analysis Learning Seminar, Princeton University, Fall 2018 - Spring 2019
Joint Princeton-Rutgers Seminar on Geometric PDEs, Fall 2019 - ~

Note taker for Nachdiplom lectures

Spring 2017

Topics in scalar curvature
Lectures by Richard Schoen

Referee services

Calculus of Variation and PDE; Mathematische Nachrichten; The Annales de l'Institut Fourier; Pacific Journal of Mathematics; Communications in Mathematical Physics; Journal of Differential Geometry; Communications in Analysis and Geometry; Communications of Contemporary Mathematics; Symmetry, Integrability and Geometry: Methods and Applications; Mathematische Annalen